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AVERAGE AND PROBABILITY.

71. **Proposed by B. F. FINKEL, A. M., M. Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.**

Find the average volume removed by boring an inch auger-hole through a cube whose edge is e, the auger to pass through two opposite faces of the cube.

72. **Proposed by B. F. FINKEL, A. M., M. Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.**

A rod is broken at random into four pieces; find the chance that no one of the pieces is greater than the sum of the other three. [From *C. Smith's Treatise on Algebra*, page 528.]

⁂ Solutions of these problems should be sent to B. F. Finkel not later than December 10.

MISCELLANEOUS.

68. **Proposed by WILLIAM HOOVER, A. M., Ph. D., Professor of Mathematics and Astronomy in Ohio State University, Athens, Ohio.**

Find the locus of the vertex of the cone enveloping the ellipsoid $x^2/a^2+y^2/b^2+z^2/c^2=1$ so that the plane of contact will constantly touch $x^2+y^2+z^2=r^2$.

69. **Proposed by WILLIAM SYMMONDS, A. M., Professor of Mathematics and Astronomy, Pacific College, Santa Rosa, P. O., Sebastopol, Cal.**

Find the locus of a point equi-distant from the circumferences of two fixed circles.

⁂ Solutions of these problems should be sent to J. M. Colaw not later tnan December 10.

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BOOKS.

Advanced Mechanics. Vol. I. *Dynamics.* The Organized Science Series. By William Briggs, M. A., F. E. S., F. R. A. S., and G. H. Bryan, Sc. D., F. R. S. 327 pages. Price, $1.00. 1898. London: W. B. Clive. New York: Hinds & Noble.

The notion of relative velocities is introduced at an early stage in the discussion of the laws of composition and resolution. The chapters on motion down inclined planes, chords of quickest descent, the parabolic path of a projectile, circular and harmonic motion, small oscillations of a pendulum, impact of elastic spheres, and the elements of rigid dynamics are highly satisfactory. There are numerous exercises. The plan of the book is good, and in the execution there is much to commend.

We have also received *Elementary Mechanics*, by the same authors, in the University Tutorial Series, which gives special prominence to fundamental principles, and is an especially good book of its grade. J. M. C.

Coördinate Geometry. The Right Line and Circle. By Briggs and Bryan. University Tutorial Series. Third Edition. 220 pages. Price, 80 cents.

In this elementary treatise the editors have tried "to realize the position of the average learner, and have constantly borne in mind the needs of the private student." The result is altogether satisfactory. J. M. C.